Reference load solutions for plates with semi-elliptical surface cracks subjected to biaxial tensile loading

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a b s t r a c t

The yield or limit load is a key parameter with respect to the accuracy of flaw assessment based on R6 type procedures such as the R6 routine, the SINTAP and FITNET method, the standard BS 7910 and others. In a number of previous papers two of the present authors proposed the use of a reference load instead of the common limit load, which not only provided more exact fracture mechanics predictions, but showed also a wider and more general application range than the conventional parameter. Here the method has been extended to biaxial tensile loading and it has been successfully validated by a thorough comparison with finite element results and alternative solutions available in the literature.